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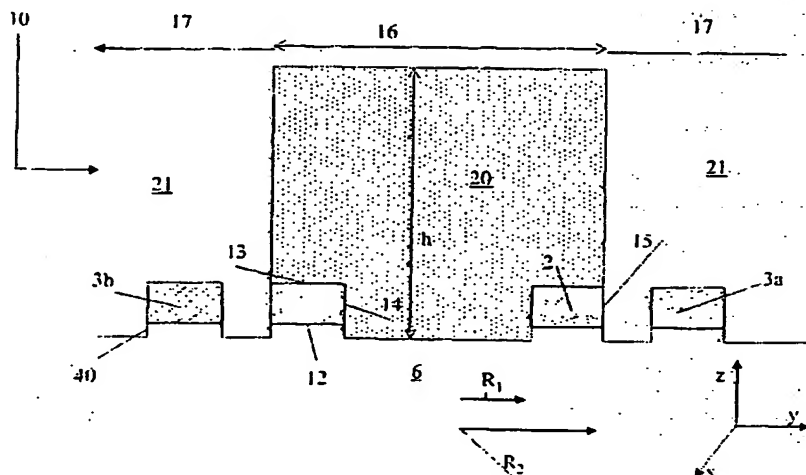
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(54) Title: **LOW LOSS MICRORING RESONATOR DEVICE**



(57) Abstract: It is disclosed a low loss micro-ring resonator device (10; 100; 10') which comprises a closed-loop resonator waveguide (2) having a first refractive index ( $n_a$ ), the resonator waveguide (2) defining an inner (16) and an outer region (17) by an outer curved edge (15) of the waveguide (2). The resonator waveguide is arranged on a substrate (6; 6') having a second refractive index ( $n_b$ ), the refractive index difference ( $\Delta n_1$ ) between the first refractive index ( $n_a$ ) and the second refractive index ( $n_b$ ) is greater than 0.3. The device (10) also comprises an upper cladding (20) covering the inner region (16) of the resonator waveguide (2) having a third refractive index ( $n_{ac}$ ); and a lateral cladding (21) in contact with the outer curved edge (15) and extending in the outer region (17), said lateral cladding (21) having a fourth refractive index ( $n_{lc}$ ), the fourth refractive index ( $n_{lc}$ ) being lower than said third refractive index ( $n_{ac}$ ). A method for reducing propagation losses of a resonator device (10; 100; 10') is also described.

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